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22 September 1964

MEMORANDUM FOR: Exploratory Development Laboratory, P&DS

THROUGH : Chief, Development Branch, P&DS

SUBJECT : Investigation of Film Gate Fluids and Film Properties

1. It is requested [redacted] perform investigation into two specific areas of interest pertaining to (1) the forthcoming use of Freon 113 in liquid gate systems, and (2) film base-emulsion-backing properties for use in the Chip Printer and Processor. 25X1

2. The first problem area- the use of Freon 113 in liquid gate systems is one that may possibly affect the operational use of the Original Negative (ON) as received [redacted] The use of Freon 113 to date indicates that it acts as a film cleaner, dissolving the protective wax from the ON and redepositing it randomally. This action, although not verified, is felt to be a danger, in that degredation of the ON as well as contamination of the gate fluid may result. An investigation is requested to determine if degredation or contamination does occur, the amount of same and a workable solution for prevention. 25X1

3. It is understood investigation of the toxic properties of Freon is already underway [redacted] It is requested this investigation be expanded to include possible mixtures such as Freon and Tolvene (reference-SMPTRE-Vol 66-Oct 57), or corrosion-inhibited methyl chloroform (SMPTE, Vol 71, Feb 63). 25X1

4. The second problem requiring investigation is the desired film qualities for the forthcoming Chip Printer and Processor application.

[redacted] 25X1

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5. The investigation of gate fluids and toxicity should be carried out before the film properties investigation. The prototype [redacted] Reader, due for delivery in October 1964, will have a liquid gate system in which the film is suspended in fluid. The Chip Printer, due for delivery in December 1965, will also use a liquid gate system, details of which are not yet known. The film properties investigation should be completed by January 1965 so as to provide timely recommendations to the Chip Processor and Chip Printer manufacturers. 25X1

[redacted] 25X1A

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